

ABSTRACT OF THE DISCLOSURE

[0080] The present invention provides a cochlear stimulation system and method for capturing and translating fine time structure (“FTS”) in incoming sounds and delivering this information spatially to the cochlea. The system comprises a FTS estimator/analyzer and a current navigator. An embodiment of the method comprises analyzing the incoming sounds within a time frequency band, extracting the slowly varying frequency components and estimating the FTS to obtain a more precise dominant FTS component within a frequency band. After adding the fine structure to the carrier to identify a precise dominant FTS component in each analysis frequency band (or stimulation channel), a stimulation current may be “steered” or directed, using the concept of virtual electrodes, to the precise spatial location (place) on the cochlea that corresponds to the dominant FTS component. This process is simultaneously repeated for each stimulation channel and each FTS component.